



1

SEQUENCE LISTING

<110> SKERRA, ARNE
FIEDLER, MARKUS

<120> SOLUBLE TRUNCATED POLYPEPTIDES OF THE NOGO-A PROTEIN

<130> 029029-0106

<140> 10/533,299

<141> 2005-04-29

<150> PCT/EP02/12210

<151> 2002-10-31

<160> 24

<170> PatentIn Ver. 3.3

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<212> PRT

<213> Rattus norvegicus

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35 40 45

Glu Asp Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly
50 55 60

Leu Ser Ala Ala Ala Val Pro Pro Ala Ala Ala Pro Leu Leu Asp
65 70 75 80

Phe Ser Ser Asp Ser Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
85 90 95

Ala Pro Pro Ala Ala Pro Glu Arg Gln Pro Ser Trp Glu Arg Ser Pro
100 105 110

Ala Ala Pro Ala Pro Ser Leu Pro Pro Ala Ala Ala Val Leu Pro Ser
115 120 125

Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro Pro Pro Pro
130 135 140

Pro Ala Gly Ala Ser Pro Leu Ala Glu Pro Ala Ala Pro Pro Ser Thr
145 150 155 160

Pro Ala Ala Pro Lys Arg Arg Gly Ser Gly Ser Val Asp Glu Thr Leu
165 170 175

Phe	Ala	Leu	Pro	Ala	Ala	Ser	Glu	Pro	Val	Ile	Pro	Ser	Ser	Ala	Glu	180	185	190
Lys	Ile	Met	Asp	Leu	Met	Glu	Gln	Pro	Gly	Asn	Thr	Val	Ser	Ser	Gly	195	200	205
Gln	Glu	Asp	Phe	Pro	Ser	Val	Leu	Leu	Glu	Thr	Ala	Ala	Ser	Leu	Pro	210	215	220
Ser	Leu	Ser	Pro	Leu	Ser	Thr	Val	Ser	Phe	Lys	Glu	His	Gly	Tyr	Leu	225	230	235
Gly	Asn	Leu	Ser	Ala	Val	Ser	Ser	Ser	Glu	Gly	Thr	Ile	Glu	Glu	Thr	245	250	255
Leu	Asn	Glu	Ala	Ser	Lys	Glu	Leu	Pro	Glu	Arg	Ala	Thr	Asn	Pro	Phe	260	265	270
Val	Asn	Arg	Asp	Leu	Ala	Glu	Phe	Ser	Glu	Leu	Glu	Tyr	Ser	Glu	Met	275	280	285
Gly	Ser	Ser	Phe	Lys	Gly	Ser	Pro	Lys	Gly	Glu	Ser	Ala	Ile	Leu	Val	290	295	300
Glu	Asn	Thr	Lys	Glu	Glu	Val	Ile	Val	Arg	Ser	Lys	Asp	Lys	Glu	Asp	305	310	315
Leu	Val	Cys	Ser	Ala	Ala	Leu	His	Ser	Pro	Gln	Glu	Ser	Pro	Val	Gly	325	330	335
Lys	Glu	Asp	Arg	Val	Val	Ser	Pro	Glu	Lys	Thr	Met	Asp	Ile	Phe	Asn	340	345	350
Glu	Met	Gln	Met	Ser	Val	Val	Ala	Pro	Val	Arg	Glu	Glu	Tyr	Ala	Asp	355	360	365
Phe	Lys	Pro	Phe	Glu	Gln	Ala	Trp	Glu	Val	Lys	Asp	Thr	Tyr	Glu	Gly	370	375	380
Ser	Arg	Asp	Val	Leu	Ala	Ala	Arg	Ala	Asn	Val	Glu	Ser	Lys	Val	Asp	385	390	395
Arg	Lys	Cys	Leu	Glu	Asp	Ser	Leu	Glu	Gln	Lys	Ser	Leu	Gly	Lys	Asp	405	410	415
Ser	Glu	Gly	Arg	Asn	Glu	Asp	Ala	Ser	Phe	Pro	Ser	Thr	Pro	Glu	Pro	420	425	430
Val	Lys	Asp	Ser	Ser	Arg	Ala	Tyr	Ile	Thr	Cys	Ala	Ser	Phe	Thr	Ser	435	440	445
Ala	Thr	Glu	Ser	Thr	Thr	Ala	Asn	Thr	Phe	Pro	Leu	Leu	Glu	Asp	His	450	455	460
Thr	Ser	Glu	Asn	Lys	Thr	Asp	Glu	Lys	Lys	Ile	Glu	Glu	Arg	Lys	Ala	465	470	475

Gln Ile Ile Thr Glu Lys Thr Ser Pro Lys Thr Ser Asn Pro Phe Leu
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 Val Ala Val Gln Asp Ser Glu Ala Asp Tyr Val Thr Thr Asp Thr Leu
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 Ser Lys Val Thr Glu Ala Ala Val Ser Asn Met Pro Glu Gly Leu Thr
 515 520 525
 Pro Asp Leu Val Gln Glu Ala Cys Glu Ser Glu Leu Asn Glu Ala Thr
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 Gly Thr Lys Ile Ala Tyr Glu Thr Lys Val Asp Leu Val Gln Thr Ser
 545 550 555 560
 Glu Ala Ile Gln Glu Ser Leu Tyr Pro Thr Ala Gln Leu Cys Pro Ser
 565 570 575
 Phe Glu Glu Ala Glu Ala Thr Pro Ser Pro Val Leu Pro Asp Ile Val
 580 585 590
 Met Glu Ala Pro Leu Asn Ser Leu Leu Pro Ser Ala Gly Ala Ser Val
 595 600 605
 Val Gln Pro Ser Val Ser Pro Leu Glu Ala Pro Pro Pro Val Ser Tyr
 610 615 620
 Asp Ser Ile Lys Leu Glu Pro Glu Asn Pro Pro Pro Tyr Glu Glu Ala
 625 630 635 640
 Met Asn Val Ala Leu Lys Ala Leu Gly Thr Lys Glu Gly Ile Lys Glu
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 Pro Glu Ser Phe Asn Ala Ala Val Gln Glu Thr Glu Ala Pro Tyr Ile
 660 665 670
 Ser Ile Ala Cys Asp Leu Ile Lys Glu Thr Lys Leu Ser Thr Glu Pro
 675 680 685
 Ser Pro Asp Phe Ser Asn Tyr Ser Glu Ile Ala Lys Phe Glu Lys Ser
 690 695 700
 Val Pro Glu His Ala Glu Leu Val Glu Asp Ser Ser Pro Glu Ser Glu
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 Pro Val Asp Leu Phe Ser Asp Asp Ser Ile Pro Glu Val Pro Gln Thr
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 Gln Glu Glu Ala Val Met Leu Met Lys Glu Ser Leu Thr Glu Val Ser
 740 745 750
 Glu Thr Val Ala Gln His Lys Glu Glu Arg Leu Ser Ala Ser Pro Gln
 755 760 765
 Glu Leu Gly Lys Pro Tyr Leu Glu Ser Phe Gln Pro Asn Leu His Ser
 770 775 780

Thr	Lys	Asp	Ala	Ala	Ser	Asn	Asp	Ile	Pro	Thr	Leu	Thr	Lys	Lys	Glu	785	790	795	800
Lys	Ile	Ser	Leu	Gln	Met	Glu	Glu	Phe	Asn	Thr	Ala	Ile	Tyr	Ser	Asn	805	810	815	
Asp	Asp	Leu	Leu	Ser	Ser	Lys	Glu	Asp	Lys	Ile	Lys	Glu	Ser	Glu	Thr	820	825	830	
Phe	Ser	Asp	Ser	Ser	Pro	Ile	Glu	Ile	Ile	Asp	Glu	Phe	Pro	Thr	Phe	835	840	845	
Val	Ser	Ala	Lys	Asp	Asp	Ser	Pro	Lys	Leu	Ala	Lys	Glu	Tyr	Thr	Asp	850	855	860	
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Asp	Ser	Leu	Pro	Cys	Leu	Glu	Leu	Pro	Cys	Asp	Leu	Ser	Phe	Lys	Asn	885	890	895	
Ile	Tyr	Pro	Lys	Asp	Glu	Val	His	Val	Ser	Asp	Glu	Phe	Ser	Glu	Asn	900	905	910	
Arg	Ser	Ser	Val	Ser	Lys	Ala	Ser	Ile	Ser	Pro	Ser	Asn	Val	Ser	Ala	915	920	925	
Leu	Glu	Pro	Gln	Thr	Glu	Met	Gly	Ser	Ile	Val	Lys	Ser	Lys	Ser	Leu	930	935	940	
Thr	Lys	Glu	Ala	Glu	Lys	Lys	Leu	Pro	Ser	Asp	Thr	Glu	Lys	Glu	Asp	945	950	955	960
Arg	Ser	Leu	Ser	Ala	Val	Leu	Ser	Ala	Glu	Leu	Ser	Lys	Thr	Ser	Val	965	970	975	
Val	Asp	Leu	Leu	Tyr	Trp	Arg	Asp	Ile	Lys	Lys	Thr	Gly	Val	Val	Phe	980	985	990	
Gly	Ala	Ser	Leu	Phe	Leu	Leu	Leu	Ser	Leu	Thr	Val	Phe	Ser	Ile	Val	995	1000	1005	
Ser	Val	Thr	Ala	Tyr	Ile	Ala	Leu	Ala	Leu	Leu	Ser	Val	Thr	Ile	Ser	1010	1015	1020	
Phe	Arg	Ile	Tyr	Lys	Gly	Val	Ile	Gln	Ala	Ile	Gln	Lys	Ser	Asp	Glu	1025	1030	1035	1040
Gly	His	Pro	Phe	Arg	Ala	Tyr	Leu	Glu	Ser	Glu	Val	Ala	Ile	Ser	Glu	1045	1050	1055	
Glu	Leu	Val	Gln	Lys	Tyr	Ser	Asn	Ser	Ala	Leu	Gly	His	Val	Asn	Ser	1060	1065	1070	
Thr	Ile	Lys	Glu	Leu	Arg	Arg	Leu	Phe	Leu	Val	Asp	Asp	Leu	Val	Asp	1075	1080	1085	

Ser Leu Lys Phe Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala
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Leu Phe Asn Gly Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe
 1105 1110 1115 1120

Ser Ile Pro Val Ile Tyr Glu Arg His Gln Val Gln Ile Asp His Tyr
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<212> PRT

<213> Homo sapiens

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Asp Glu Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu Asp
 35 40 45

Leu Glu Glu Leu Glu Val Leu Glu Arg Lys Pro Ala Ala Gly Leu Ser
 50 55 60

Ala Ala Pro Val Pro Thr Ala Pro Ala Ala Gly Ala Pro Leu Met Asp
 65 70 75 80

Phe Gly Asn Glu Phe Val Pro Pro Ala Pro Arg Gly Pro Leu Pro Ala
 85 90 95

Ala Pro Pro Val Ala Pro Glu Arg Gln Pro Ser Trp Asp Pro Ser Pro
 100 105 110

Val Ser Ser Thr Val Pro Ala Pro Ser Pro Leu Ser Ala Ala Ala Val
 115 120 125

Ser Pro Ser Lys Leu Pro Glu Asp Asp Glu Pro Pro Ala Arg Pro Pro
 130 135 140

Pro Pro Pro Pro Ala Ser Val Ser Pro Gln Ala Glu Pro Val Trp Thr
 145 150 155 160

Pro Pro Ala Pro Ala Pro Ala Ala Pro Pro Ser Thr Pro Ala Ala Pro
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Lys Arg Arg Gly Ser Ser Gly Ser Val Asp Glu Thr Leu Phe Ala Leu
 180 185 190

Pro Ala Ala Ser Glu Pro Val Ile Arg Ser Ser Ala Glu Asn Met Glu
 195 200 205
 Leu Lys Glu Gln Pro Gly Asn Thr Ile Ser Ala Gly Gln Glu Asp Phe
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 Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro Ser Leu Ser Pro
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 Leu Ser Ala Ala Ser Phe Lys Glu His Glu Tyr Leu Glu Asn Leu Ser
 245 250 255
 Thr Val Leu Pro Thr Glu Gly Thr Leu Gln Glu Asn Val Ser Glu Ala
 260 265 270
 Ser Lys Glu Val Ser Glu Lys Ala Lys Thr Leu Leu Ile Asp Arg Asp
 275 280 285
 Leu Thr Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser Phe
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 Ser Val Ser Pro Lys Ala Glu Ser Ala Val Ile Val Ala Asn Pro Arg
 305 310 315 320
 Glu Glu Ile Ile Val Lys Asn Lys Asp Glu Glu Glu Lys Leu Val Ser
 325 330 335
 Asn Asn Ile Leu His Asn Gln Gln Glu Leu Pro Thr Ala Leu Thr Lys
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 Leu Val Lys Glu Asp Glu Val Val Ser Ser Glu Lys Ala Lys Asp Ser
 355 360 365
 Phe Asn Glu Lys Arg Val Ala Val Glu Ala Pro Met Arg Glu Glu Tyr
 370 375 380
 Ala Asp Phe Lys Pro Phe Glu Arg Val Trp Glu Val Lys Asp Ser Lys
 385 390 395 400
 Glu Asp Ser Asp Met Leu Ala Ala Gly Gly Lys Ile Glu Ser Asn Leu
 405 410 415
 Glu Ser Lys Val Asp Lys Lys Cys Phe Ala Asp Ser Leu Glu Gln Thr
 420 425 430
 Asn His Glu Lys Asn Ser Glu Ser Ser Asn Asp Asp Thr Ser Phe Pro
 435 440 445
 Ser Thr Pro Glu Gly Ile Lys Asp Arg Pro Gly Ala Tyr Ile Thr Cys
 450 455 460
 Ala Pro Phe Asn Pro Ala Ala Thr Glu Ser Ile Ala Thr Asn Ile Phe
 465 470 475 480
 Pro Leu Leu Gly Asp Pro Thr Ser Glu Asn Lys Thr Asp Glu Lys Lys
 485 490 495

Ile	Glu	Glu	Lys	Lys	Ala	Gln	Ile	Val	Thr	Glu	Lys	Asn	Thr	Ser	Thr	500	505	510	
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Tyr	Val	Thr	Thr	Asp	Asn	Leu	Thr	Lys	Val	Thr	Glu	Glu	Val	Val	Ala	530	535	540	
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Met	Ala	Lys	Val	Glu	Gln	Pro	Val	Pro	Asp	His	Ser	Glu	Leu	Val	Glu	725	730	735	
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Glu	Ser	Leu	Thr	Glu	Thr	Ser	Phe	Glu	Ser	Met	Ile	Glu	Tyr	Glu	Gln	770	775	780	
Lys	Glu	Lys	Leu	Ser	Ala	Leu	Pro	Pro	Glu	Gly	Gly	Lys	Pro	Tyr	Leu	785	790	795	800

Glu	Ser	Phe	Lys	Leu	Ser	Leu	Asp	Asn	Thr	Lys	Asp	Thr	Leu	Leu	Pro	805	810	815	
Asp	Glu	Val	Ser	Thr	Leu	Ser	Lys	Lys	Glu	Lys	Ile	Pro	Ile	Gln	Met	820	825	830	
Glu	Glu	Leu	Ser	Thr	Ala	Val	Tyr	Ser	Asn	Asp	Asp	Leu	Phe	Ile	Ser	835	840	845	
Lys	Glu	Ala	Gln	Ile	Arg	Glu	Thr	Glu	Thr	Phe	Ser	Asp	Ser	Ser	Pro	850	855	860	
Ile	Glu	Ile	Ile	Asp	Glu	Phe	Pro	Thr	Leu	Ile	Ser	Ser	Lys	Thr	Asp	865	870	875	880
Ser	Phe	Ser	Lys	Leu	Ala	Arg	Glu	Tyr	Thr	Asp	Leu	Glu	Val	Ser	His	885	890	895	
Lys	Ser	Glu	Ile	Ala	Gln	Ala	Pro	Asp	Gly	Ala	Gly	Ser	Leu	Pro	Cys	900	905	910	
Thr	Glu	Leu	Pro	His	Asp	Leu	Ser	Leu	Lys	Asn	Ile	Gln	Pro	Lys	Val	915	920	925	
Glu	Glu	Lys	Ile	Ser	Phe	Ser	Asp	Asp	Phe	Ser	Lys	Asn	Gly	Ser	Ala	930	935	940	
Thr	Ser	Lys	Val	Leu	Leu	Leu	Pro	Pro	Asp	Val	Ser	Ala	Leu	Ala	Thr	945	950	955	960
Gln	Ala	Glu	Ile	Glu	Ser	Ile	Val	Lys	Pro	Lys	Val	Leu	Val	Lys	Glu	965	970	975	
Ala	Glu	Lys	Lys	Leu	Pro	Ser	Asp	Thr	Glu	Lys	Glu	Asp	Arg	Ser	Pro	980	985	990	
Ser	Ala	Ile	Phe	Ser	Ala	Glu	Leu	Ser	Lys	Thr	Ser	Val	Val	Asp	Leu	995	1000	1005	
Leu	Tyr	Trp	Arg	Asp	Ile	Lys	Lys	Thr	Gly	Val	Val	Phe	Gly	Ala	Ser	1010	1015	1020	
Leu	Phe	Leu	Leu	Leu	Ser	Leu	Thr	Val	Phe	Ser	Ile	Val	Ser	Val	Thr	1025	1030	1035	1040
Ala	Tyr	Ile	Ala	Leu	Ala	Leu	Leu	Ser	Val	Thr	Ile	Ser	Phe	Arg	Ile	1045	1050	1055	
Tyr	Lys	Gly	Val	Ile	Gln	Ala	Ile	Gln	Lys	Ser	Asp	Glu	Gly	His	Pro	1060	1065	1070	
Phe	Arg	Ala	Tyr	Leu	Glu	Ser	Glu	Val	Ala	Ile	Ser	Glu	Glu	Leu	Val	1075	1080	1085	
Gln	Lys	Tyr	Ser	Asn	Ser	Ala	Leu	Gly	His	Val	Asn	Cys	Thr	Ile	Lys	1090	1095	1100	

Glu Leu Arg Arg Leu Phe Leu Val Asp Asp Leu Val Asp Ser Leu Lys
 1105 1110 1115 1120

Phe Ala Val Leu Met Trp Val Phe Thr Tyr Val Gly Ala Leu Phe Asn
 1125 1130 1135

Gly Leu Thr Leu Leu Ile Leu Ala Leu Ile Ser Leu Phe Ser Val Pro
 1140 1145 1150

Val Ile Tyr Glu Arg His Gln Ala Gln Ile Asp His Tyr Leu Gly Leu
 1155 1160 1165

Ala Asn Lys Asn Val Lys Asp Ala Met Ala Lys Ile Gln Ala Lys Ile
 1170 1175 1180

Pro Gly Leu Lys Arg Lys Ala Glu
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<211> 28

<212> DNA

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<212> DNA

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 ccc 63

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 primer

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acagta 66

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          20          25          30
Trp Leu Gly Trp Val Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
          35          40          45
Gly Asp Ile Tyr Pro Gly Gly Gly Tyr Thr Asn Tyr Asn Glu Lys Phe
          50          55          60
Lys Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr
          65          70          75          80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
          85          90          95

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Ala Arg Phe Tyr Tyr Gly Ser Ser Tyr Trp Tyr Phe Asp Val Trp Gly
 100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

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 protein sequence

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 Leu Asn Trp Tyr Gln Arg Lys Gln Gly Lys Ser Pro Gln Leu Leu Ile
 35 40 45
 Tyr Gly Ala Thr Asn Leu Ala Asp Gly Met Ser Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Arg Gln Tyr Ser Leu Lys Ile Ser Ser Leu His Pro
 65 70 75 80
 Asp Asp Val Ala Thr Tyr Tyr Cys Gln Asn Ile Asn Arg Val Pro Val
 85 90 95
 Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys
 100 105

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 <222> (22)..(84)

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<221> mat_peptide

<222> (85)..(2238)

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Ala Leu Ala Gly Phe Ala Thr Val Ala Gln Ala Ser Phe Lys Glu His	
-10 -5 -1 1 5	
gga tac ctt ggt aac tta tca gca gtg tca tcc tca gaa gga aca att	147
Gly Tyr Leu Gly Asn Leu Ser Ala Val Ser Ser Ser Glu Gly Thr Ile	
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gaa gaa act tta aat gaa gct tct aaa gag ttg cca gag agg gca aca	195
Glu Glu Thr Leu Asn Glu Ala Ser Lys Glu Leu Pro Glu Arg Ala Thr	
25 30 35	
aat cca ttt gta aat aga gat tta gca gaa ttt tca gaa tta gaa tat	243
Asn Pro Phe Val Asn Arg Asp Leu Ala Glu Phe Ser Glu Leu Glu Tyr	
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tca gaa atg gga tca tct ttt aaa ggc tcc cca aaa gga gag tca gcc	291
Ser Glu Met Gly Ser Ser Phe Lys Gly Ser Pro Lys Gly Glu Ser Ala	
55 60 65	
ata tta gta gaa aac act aag gaa gaa gta att gtg agg agt aaa gac	339
Ile Leu Val Glu Asn Thr Lys Glu Glu Val Ile Val Arg Ser Lys Asp	
70 75 80 85	
aaa gag gat tta gtt tgt agt gca gcc ctt cac agt cca caa gaa tca	387
Lys Glu Asp Leu Val Cys Ser Ala Ala Leu His Ser Pro Gln Glu Ser	
90 95 100	
cct gtg ggt aaa gaa gac aga gtt gtg tct cca gaa aag aca atg gac	435
Pro Val Gly Lys Glu Asp Arg Val Val Ser Pro Glu Lys Thr Met Asp	
105 110 115	
att ttt aat gaa atg cag atg tca gta gta gca cct gtg agg gaa gag	483
Ile Phe Asn Glu Met Gln Met Ser Val Val Ala Pro Val Arg Glu Glu	
120 125 130	
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Tyr Ala Asp Phe Lys Pro Phe Glu Gln Ala Trp Glu Val Lys Asp Thr	
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tat gag gga agt agg gat gtg ctg gct gct aga gct aat gtg gaa agt	579
Tyr Glu Gly Ser Arg Asp Val Leu Ala Ala Arg Ala Asn Val Glu Ser	
150 155 160 165	
aaa gtg gac aga aaa tgc ttg gaa gat agc ctg gag caa aaa agt ctt	627
Lys Val Asp Arg Lys Cys Leu Glu Asp Ser Leu Glu Gln Lys Ser Leu	
170 175 180	

ggg aag gat agt gaa ggc aga aat gag gat gct tct ttc ccc agt acc	675
Gly Lys Asp Ser Glu Gly Arg Asn Glu Asp Ala Ser Phe Pro Ser Thr	
185 190 195	
cca gaa cct gtg aag gac agc tcc aga gca tat att acc tgt gct tcc	723
Pro Glu Pro Val Lys Asp Ser Ser Arg Ala Tyr Ile Thr Cys Ala Ser	
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cct ttc ctt gta gca gta cag gat tct gag gca gat tat gtt aca aca	915
Pro Phe Leu Val Ala Val Gln Asp Ser Glu Ala Asp Tyr Val Thr Thr	
265 270 275	
gat acc tta tca aag gtg act gag gca gca gtg tca aac atg cct gaa	963
Asp Thr Leu Ser Lys Val Thr Glu Ala Ala Val Ser Asn Met Pro Glu	
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Ala Ser Val Val Gln Pro Ser Val Ser Pro Leu Glu Ala Pro Pro Pro	
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Val Ser Tyr Asp Ser Ile Lys Leu Glu Pro Glu Asn Pro Pro Pro Tyr	
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Ser Glu Thr Phe Ser Asp Ser Ser Pro Ile Glu Ile Ile Asp Glu Phe	
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Pro Thr Phe Val Ser Ala Lys Asp Asp Ser Pro Lys Leu Ala Lys Glu	
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tcc gaa aat agg tcc agt gta tct aag gca tcc ata tcg cct tca aat 2163
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Asp Phe Pro Ser Val Leu Leu Glu Thr Ala Ala Ser Leu Pro Ser Leu	
40 45 50	
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Ser Pro Leu Ser Thr Val Ser Ser Phe Lys Glu His Gly Tyr Leu Gly Asn	
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Leu Ser Ala Val Ser Ser Ser Glu Gly Thr Ile Glu Glu Thr Leu Asn	
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gaa gct tct aaa gag ttg cca gag agg gca aca aat cca ttt gta aat	387
Glu Ala Ser Lys Glu Leu Pro Glu Arg Ala Thr Asn Pro Phe Val Asn	
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Asp Val Leu Ala Ala Arg Ala Asn Val Glu Ser Lys Val Asp Arg Lys	
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Glu Ser Thr Thr Ala Asn Thr Phe Pro Leu Leu Glu Asp His Thr Ser	
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ccc agt gta tcc cca ctg gaa gca cct cct cca gtt agt tat gac agt	1443
Pro Ser Val Ser Pro Leu Glu Ala Pro Pro Pro Val Ser Tyr Asp Ser	
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ata aag ctt gag cct gaa aac ccc cca cca tat gaa gaa gcc atg aat	1491
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 745 750 755

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Glu Gly Arg Asn Glu Asp Ala Ser Phe Pro Ser Thr Pro Glu Pro Val	
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Lys Asp Ser Ser Arg Ala Tyr Ile Thr Cys Ala Ser Phe Thr Ser Ala	
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Thr Glu Ser Thr Thr Ala Asn Thr Phe Pro Leu Leu Glu Asp His Thr	
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440 445 450	
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455 460 465	

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Asp Leu Leu Ser Ser Lys Glu Asp Lys Ile Lys Glu Ser Glu Thr Phe	
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Ser Asp Ser Ser Pro Ile Glu Ile Ile Asp Glu Phe Pro Thr Phe Val	
615 620 625	
agt gct aaa gat gat tct cct aaa tta gcc aag gag tac act gat cta	2019
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Glu Val Ser Asp Lys Ser Glu Ile Ala Asn Ile Gln Ser Gly Ala Asp	
650 655 660	
tca ttg cct tgc tta gaa ttg ccc tgt gac ctt tct ttc aag aat ata	2115
Ser Leu Pro Cys Leu Glu Leu Pro Cys Asp Leu Ser Phe Lys Asn Ile	
665 670 675	
tat cct aaa gat gaa gta cat gtt tca gat gaa ttc tcc gaa aat agg	2163
Tyr Pro Lys Asp Glu Val His Val Ser Asp Glu Phe Ser Glu Asn Arg	
680 685 690	

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tcc agt gta tct aag gca tcc ata tcg cct tca aat gtc tct gct ttg 2211
Ser Ser Val Ser Lys Ala Ser Ile Ser Pro Ser Asn Val Ser Ala Leu
695 700 705

gaa cct cag aca gaa atg ggc agc ata gtt aaa agc gct cac cat cac 2259
Glu Pro Gln Thr Glu Met Gly Ser Ile Val Lys Ser Ala His His His
710 715 720 725

cat cac cat taataagctt 2278
His His His

```

```

<210> 16
<211> 798
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
protein sequence

```

```

<400> 16
Met Lys Lys Thr Ala Ile Ala Ile Ala Val Ala Leu Ala Gly Phe Ala
-20 -15 -10

Thr Val Ala Gln Ala Glu Thr Leu Phe Ala Leu Pro Ala Ala Ser Glu
-5 -1 1 5 10

Pro Val Ile Pro Ser Ser Ala Glu Lys Ile Met Asp Leu Met Glu Gln
15 20 25

Pro Gly Asn Thr Val Ser Ser Gly Gln Glu Asp Phe Pro Ser Val Leu
30 35 40

Leu Glu Thr Ala Ala Ser Leu Pro Ser Leu Ser Pro Leu Ser Thr Val
45 50 55

Ser Phe Lys Glu His Gly Tyr Leu Gly Asn Leu Ser Ala Val Ser Ser
60 65 70 75

Ser Glu Gly Thr Ile Glu Glu Thr Leu Asn Glu Ala Ser Lys Glu Leu
80 85 90

Pro Glu Arg Ala Thr Asn Pro Phe Val Asn Arg Asp Leu Ala Glu Phe
95 100 105

Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser Phe Lys Gly Ser Pro
110 115 120

Lys Gly Glu Ser Ala Ile Leu Val Glu Asn Thr Lys Glu Glu Val Ile
125 130 135

Val Arg Ser Lys Asp Lys Glu Asp Leu Val Cys Ser Ala Ala Leu His
140 145 150 155

Ser Pro Gln Glu Ser Pro Val Gly Lys Glu Asp Arg Val Val Ser Pro
160 165 170

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Glu Lys Thr Met Asp Ile Phe Asn Glu Met Gln Met Ser Val Val Ala
 175 180 185
 Pro Val Arg Glu Glu Tyr Ala Asp Phe Lys Pro Phe Glu Gln Ala Trp
 190 195 200
 Glu Val Lys Asp Thr Tyr Glu Gly Ser Arg Asp Val Leu Ala Ala Arg
 205 210 215
 Ala Asn Val Glu Ser Lys Val Asp Arg Lys Cys Leu Glu Asp Ser Leu
 220 225 230 235
 Glu Gln Lys Ser Leu Gly Lys Asp Ser Glu Gly Arg Asn Glu Asp Ala
 240 245 250
 Ser Phe Pro Ser Thr Pro Glu Pro Val Lys Asp Ser Ser Arg Ala Tyr
 255 260 265
 Ile Thr Cys Ala Ser Phe Thr Ser Ala Thr Glu Ser Thr Thr Ala Asn
 270 275 280
 Thr Phe Pro Leu Leu Glu Asp His Thr Ser Glu Asn Lys Thr Asp Glu
 285 290 295
 Lys Lys Ile Glu Glu Arg Lys Ala Gln Ile Ile Thr Glu Lys Thr Ser
 300 305 310 315
 Pro Lys Thr Ser Asn Pro Phe Leu Val Ala Val Gln Asp Ser Glu Ala
 320 325 330
 Asp Tyr Val Thr Thr Asp Thr Leu Ser Lys Val Thr Glu Ala Ala Val
 335 340 345
 Ser Asn Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys
 350 355 360
 Glu Ser Glu Leu Asn Glu Ala Thr Gly Thr Lys Ile Ala Tyr Glu Thr
 365 370 375
 Lys Val Asp Leu Val Gln Thr Ser Glu Ala Ile Gln Glu Ser Leu Tyr
 380 385 390 395
 Pro Thr Ala Gln Leu Cys Pro Ser Phe Glu Glu Ala Glu Ala Thr Pro
 400 405 410
 Ser Pro Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser Leu
 415 420 425
 Leu Pro Ser Ala Gly Ala Ser Val Val Gln Pro Ser Val Ser Pro Leu
 430 435 440
 Glu Ala Pro Pro Pro Val Ser Tyr Asp Ser Ile Lys Leu Glu Pro Glu
 445 450 455
 Asn Pro Pro Pro Tyr Glu Glu Ala Met Asn Val Ala Leu Lys Ala Leu
 460 465 470 475

Gly Thr Lys Glu Gly Ile Lys Glu Pro Glu Ser Phe Asn Ala Ala Val
 480 485 490
 Gln Glu Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys
 495 500 505
 Glu Thr Lys Leu Ser Thr Glu Pro Ser Pro Asp Phe Ser Asn Tyr Ser
 510 515 520
 Glu Ile Ala Lys Phe Glu Lys Ser Val Pro Glu His Ala Glu Leu Val
 525 530 535
 Glu Asp Ser Ser Pro Glu Ser Glu Pro Val Asp Leu Phe Ser Asp Asp
 540 545 550 555
 Ser Ile Pro Glu Val Pro Gln Thr Gln Glu Glu Ala Val Met Leu Met
 560 565 570
 Lys Glu Ser Leu Thr Glu Val Ser Glu Thr Val Ala Gln His Lys Glu
 575 580 585
 Glu Arg Leu Ser Ala Ser Pro Gln Glu Leu Gly Lys Pro Tyr Leu Glu
 590 595 600
 Ser Phe Gln Pro Asn Leu His Ser Thr Lys Asp Ala Ala Ser Asn Asp
 605 610 615
 Ile Pro Thr Leu Thr Lys Lys Glu Lys Ile Ser Leu Gln Met Glu Glu
 620 625 630 635
 Phe Asn Thr Ala Ile Tyr Ser Asn Asp Asp Leu Leu Ser Ser Lys Glu
 640 645 650
 Asp Lys Ile Lys Glu Ser Glu Thr Phe Ser Asp Ser Ser Pro Ile Glu
 655 660 665
 Ile Ile Asp Glu Phe Pro Thr Phe Val Ser Ala Lys Asp Asp Ser Pro
 670 675 680
 Lys Leu Ala Lys Glu Tyr Thr Asp Leu Glu Val Ser Asp Lys Ser Glu
 685 690 695
 Ile Ala Asn Ile Gln Ser Gly Ala Asp Ser Leu Pro Cys Leu Glu Leu
 700 705 710 715
 Pro Cys Asp Leu Ser Phe Lys Asn Ile Tyr Pro Lys Asp Glu Val His
 720 725 730
 Val Ser Asp Glu Phe Ser Glu Asn Arg Ser Ser Val Ser Lys Ala Ser
 735 740 745
 Ile Ser Pro Ser Asn Val Ser Ala Leu Glu Pro Gln Thr Glu Met Gly
 750 755 760
 Ser Ile Val Lys Ser Ala Trp Arg His Pro Gln Phe Gly Gly
 765 770 775

<210> 17

<211> 739

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 17

Met Lys Lys Thr Ala Ile Ala Ile Ala Val Ala Leu Ala Gly Phe Ala
-20 -15 -10Thr Val Ala Gln Ala Ser Phe Lys Glu His Gly Tyr Leu Gly Asn Leu
-5 -1 1 5 10Ser Ala Val Ser Ser Ser Glu Gly Thr Ile Glu Glu Thr Leu Asn Glu
15 20 25Ala Ser Lys Glu Leu Pro Glu Arg Ala Thr Asn Pro Phe Val Asn Arg
30 35 40Asp Leu Ala Glu Phe Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser
45 50 55Phe Lys Gly Ser Pro Lys Gly Glu Ser Ala Ile Leu Val Glu Asn Thr
60 65 70 75Lys Glu Glu Val Ile Val Arg Ser Lys Asp Lys Glu Asp Leu Val Cys
80 85 90Ser Ala Ala Leu His Ser Pro Gln Glu Ser Pro Val Gly Lys Glu Asp
95 100 105Arg Val Val Ser Pro Glu Lys Thr Met Asp Ile Phe Asn Glu Met Gln
110 115 120Met Ser Val Val Ala Pro Val Arg Glu Glu Tyr Ala Asp Phe Lys Pro
125 130 135Phe Glu Gln Ala Trp Glu Val Lys Asp Thr Tyr Glu Gly Ser Arg Asp
140 145 150 155Val Leu Ala Ala Arg Ala Asn Val Glu Ser Lys Val Asp Arg Lys Cys
160 165 170Leu Glu Asp Ser Leu Glu Gln Lys Ser Leu Gly Lys Asp Ser Glu Gly
175 180 185Arg Asn Glu Asp Ala Ser Phe Pro Ser Thr Pro Glu Pro Val Lys Asp
190 195 200Ser Ser Arg Ala Tyr Ile Thr Cys Ala Ser Phe Thr Ser Ala Thr Glu
205 210 215Ser Thr Thr Ala Asn Thr Phe Pro Leu Leu Glu Asp His Thr Ser Glu
220 225 230 235

Asn	Lys	Thr	Asp	Glu	Lys	Lys	Ile	Glu	Glu	Arg	Lys	Ala	Gln	Ile	Ile		
				240					245					250			
Thr	Glu	Lys	Thr	Ser	Pro	Lys	Thr	Ser	Asn	Pro	Phe	Leu	Val	Ala	Val		
				255				260					265				
Gln	Asp	Ser	Glu	Ala	Asp	Tyr	Val	Thr	Thr	Asp	Thr	Leu	Ser	Lys	Val		
		270					275					280					
Thr	Glu	Ala	Ala	Val	Ser	Asn	Met	Pro	Glu	Gly	Leu	Thr	Pro	Asp	Leu		
	285					290					295						
Val	Gln	Glu	Ala	Cys	Glu	Ser	Glu	Leu	Asn	Glu	Ala	Thr	Gly	Thr	Lys		
300					305					310					315		
Ile	Ala	Tyr	Glu	Thr	Lys	Val	Asp	Leu	Val	Gln	Thr	Ser	Glu	Ala	Ile		
				320					325						330		
Gln	Glu	Ser	Leu	Tyr	Pro	Thr	Ala	Gln	Leu	Cys	Pro	Ser	Phe	Glu	Glu		
			335					340					345				
Ala	Glu	Ala	Thr	Pro	Ser	Pro	Val	Leu	Pro	Asp	Ile	Val	Met	Glu	Ala		
		350					355					360					
Pro	Leu	Asn	Ser	Leu	Leu	Pro	Ser	Ala	Gly	Ala	Ser	Val	Val	Gln	Pro		
	365					370					375						
Ser	Val	Ser	Pro	Leu	Glu	Ala	Pro	Pro	Pro	Val	Ser	Tyr	Asp	Ser	Ile		
380					385					390					395		
Lys	Leu	Glu	Pro	Glu	Asn	Pro	Pro	Pro	Tyr	Glu	Glu	Ala	Met	Asn	Val		
				400					405					410			
Ala	Leu	Lys	Ala	Leu	Gly	Thr	Lys	Glu	Gly	Ile	Lys	Glu	Pro	Glu	Ser		
			415					420					425				
Phe	Asn	Ala	Ala	Val	Gln	Glu	Thr	Glu	Ala	Pro	Tyr	Ile	Ser	Ile	Ala		
	430						435					440					
Cys	Asp	Leu	Ile	Lys	Glu	Thr	Lys	Leu	Ser	Thr	Glu	Pro	Ser	Pro	Asp		
	445					450					455						
Phe	Ser	Asn	Tyr	Ser	Glu	Ile	Ala	Lys	Phe	Glu	Lys	Ser	Val	Pro	Glu		
460					465					470					475		
His	Ala	Glu	Leu	Val	Glu	Asp	Ser	Ser	Pro	Glu	Ser	Glu	Pro	Val	Asp		
			480						485					490			
Leu	Phe	Ser	Asp	Asp	Ser	Ile	Pro	Glu	Val	Pro	Gln	Thr	Gln	Glu	Glu		
			495					500					505				
Ala	Val	Met	Leu	Met	Lys	Glu	Ser	Leu	Thr	Glu	Val	Ser	Glu	Thr	Val		
		510					515					520					
Ala	Gln	His	Lys	Glu	Glu	Arg	Leu	Ser	Ala	Ser	Pro	Gln	Glu	Leu	Gly		
	525					530					535						

Lys Pro Tyr Leu Glu Ser Phe Gln Pro Asn Leu His Ser Thr Lys Asp
540 545 550 555

Ala Ala Ser Asn Asp Ile Pro Thr Leu Thr Lys Lys Glu Lys Ile Ser
560 565 570

Leu Gln Met Glu Glu Phe Asn Thr Ala Ile Tyr Ser Asn Asp Asp Leu
575 580 585

Leu Ser Ser Lys Glu Asp Lys Ile Lys Glu Ser Glu Thr Phe Ser Asp
590 595 600

Ser Ser Pro Ile Glu Ile Ile Asp Glu Phe Pro Thr Phe Val Ser Ala
605 610 615

Lys Asp Asp Ser Pro Lys Leu Ala Lys Glu Tyr Thr Asp Leu Glu Val
620 625 630 635

Ser Asp Lys Ser Glu Ile Ala Asn Ile Gln Ser Gly Ala Asp Ser Leu
640 645 650

Pro Cys Leu Glu Leu Pro Cys Asp Leu Ser Phe Lys Asn Ile Tyr Pro
655 660 665

Lys Asp Glu Val His Val Ser Asp Glu Phe Ser Glu Asn Arg Ser Ser
670 675 680

Val Ser Lys Ala Ser Ile Ser Pro Ser Asn Val Ser Ala Leu Glu Pro
685 690 695

Gln Thr Glu Met Gly Ser Ile Val Lys Ser Ala Trp Arg His Pro Gln
700 705 710 715

Phe Gly Gly

<210> 18

<211> 749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 18

Met Lys Lys Thr Ala Ile Ala Ile Ala Val Ala Leu Ala Gly Phe Ala
-20 -15 -10

Thr Val Ala Gln Ala Ala Ser Trp Ser His Pro Gln Phe Glu Lys Gly
-5 -1 1 5 10

Ala Ser Phe Lys Glu His Gly Tyr Leu Gly Asn Leu Ser Ala Val Ser
15 20 25

Ser Ser Glu Gly Thr Ile Glu Glu Thr Leu Asn Glu Ala Ser Lys Glu
30 35 40

Leu Pro Glu Arg Ala Thr Asn Pro Phe Val Asn Arg Asp Leu Ala Glu
 45 50 55
 Phe Ser Glu Leu Glu Tyr Ser Glu Met Gly Ser Ser Phe Lys Gly Ser
 60 65 70 75
 Pro Lys Gly Glu Ser Ala Ile Leu Val Glu Asn Thr Lys Glu Glu Val
 80 85 90
 Ile Val Arg Ser Lys Asp Lys Glu Asp Leu Val Cys Ser Ala Ala Leu
 95 100 105
 His Ser Pro Gln Glu Ser Pro Val Gly Lys Glu Asp Arg Val Val Ser
 110 115 120
 Pro Glu Lys Thr Met Asp Ile Phe Asn Glu Met Gln Met Ser Val Val
 125 130 135
 Ala Pro Val Arg Glu Glu Tyr Ala Asp Phe Lys Pro Phe Glu Gln Ala
 140 145 150 155
 Trp Glu Val Lys Asp Thr Tyr Glu Gly Ser Arg Asp Val Leu Ala Ala
 160 165 170
 Arg Ala Asn Val Glu Ser Lys Val Asp Arg Lys Cys Leu Glu Asp Ser
 175 180 185
 Leu Glu Gln Lys Ser Leu Gly Lys Asp Ser Glu Gly Arg Asn Glu Asp
 190 195 200
 Ala Ser Phe Pro Ser Thr Pro Glu Pro Val Lys Asp Ser Ser Arg Ala
 205 210 215
 Tyr Ile Thr Cys Ala Ser Phe Thr Ser Ala Thr Glu Ser Thr Thr Ala
 220 225 230 235
 Asn Thr Phe Pro Leu Leu Glu Asp His Thr Ser Glu Asn Lys Thr Asp
 240 245 250
 Glu Lys Lys Ile Glu Glu Arg Lys Ala Gln Ile Ile Thr Glu Lys Thr
 255 260 265
 Ser Pro Lys Thr Ser Asn Pro Phe Leu Val Ala Val Gln Asp Ser Glu
 270 275 280
 Ala Asp Tyr Val Thr Thr Asp Thr Leu Ser Lys Val Thr Glu Ala Ala
 285 290 295
 Val Ser Asn Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala
 300 305 310 315
 Cys Glu Ser Glu Leu Asn Glu Ala Thr Gly Thr Lys Ile Ala Tyr Glu
 320 325 330
 Thr Lys Val Asp Leu Val Gln Thr Ser Glu Ala Ile Gln Glu Ser Leu
 335 340 345

Tyr Pro Thr Ala Gln Leu Cys Pro Ser Phe Glu Glu Ala Glu Ala Thr
 350 355 360
 Pro Ser Pro Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser
 365 370 375
 Leu Leu Pro Ser Ala Gly Ala Ser Val Val Gln Pro Ser Val Ser Pro
 380 385 390 395
 Leu Glu Ala Pro Pro Pro Val Ser Tyr Asp Ser Ile Lys Leu Glu Pro
 400 405 410
 Glu Asn Pro Pro Pro Tyr Glu Glu Ala Met Asn Val Ala Leu Lys Ala
 415 420 425
 Leu Gly Thr Lys Glu Gly Ile Lys Glu Pro Glu Ser Phe Asn Ala Ala
 430 435 440
 Val Gln Glu Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile
 445 450 455
 Lys Glu Thr Lys Leu Ser Thr Glu Pro Ser Pro Asp Phe Ser Asn Tyr
 460 465 470 475
 Ser Glu Ile Ala Lys Phe Glu Lys Ser Val Pro Glu His Ala Glu Leu
 480 485 490
 Val Glu Asp Ser Ser Pro Glu Ser Glu Pro Val Asp Leu Phe Ser Asp
 495 500 505
 Asp Ser Ile Pro Glu Val Pro Gln Thr Gln Glu Glu Ala Val Met Leu
 510 515 520
 Met Lys Glu Ser Leu Thr Glu Val Ser Glu Thr Val Ala Gln His Lys
 525 530 535
 Glu Glu Arg Leu Ser Ala Ser Pro Gln Glu Leu Gly Lys Pro Tyr Leu
 540 545 550 555
 Glu Ser Phe Gln Pro Asn Leu His Ser Thr Lys Asp Ala Ala Ser Asn
 560 565 570
 Asp Ile Pro Thr Leu Thr Lys Lys Glu Lys Ile Ser Leu Gln Met Glu
 575 580 585
 Glu Phe Asn Thr Ala Ile Tyr Ser Asn Asp Asp Leu Leu Ser Ser Lys
 590 595 600
 Glu Asp Lys Ile Lys Glu Ser Glu Thr Phe Ser Asp Ser Ser Pro Ile
 605 610 615
 Glu Ile Ile Asp Glu Phe Pro Thr Phe Val Ser Ala Lys Asp Asp Ser
 620 625 630 635
 Pro Lys Leu Ala Lys Glu Tyr Thr Asp Leu Glu Val Ser Asp Lys Ser
 640 645 650

Glu Ile Ala Asn Ile Gln Ser Gly Ala Asp Ser Leu Pro Cys Leu Glu
 655 660 665
 Leu Pro Cys Asp Leu Ser Phe Lys Asn Ile Tyr Pro Lys Asp Glu Val
 670 675 680
 His Val Ser Asp Glu Phe Ser Glu Asn Arg Ser Ser Val Ser Lys Ala
 685 690 695
 Ser Ile Ser Pro Ser Asn Val Ser Ala Leu Glu Pro Gln Thr Glu Met
 700 705 710 715
 Gly Ser Ile Val Lys Ser Ala His His His His His His
 720 725

<210> 19
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 19
 Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ala Ala Ser Val Gly
 1 5 10 15
 Glu Thr Val Thr Ile Thr Cys Gly Ala Ser Glu Asn Ile Tyr Gly Ala
 20 25 30
 Leu Asn Trp Tyr Gln Arg Lys Gln Gly Lys Ser Pro Gln Leu Leu Ile
 35 40 45
 Tyr Gly Ala Thr Asn Leu Ala Asp Gly Met Ser Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Arg Gln Tyr Ser Leu Lys Ile Ser Ser Leu His Pro
 65 70 75 80
 Asp Asp Val Ala Thr Tyr Tyr Cys Gln Asn Val Leu Ser Thr Pro Arg
 85 90 95
 Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 20
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 20

```

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ala Ala Ser Val Gly
 1             5             10             15
Glu Thr Val Thr Ile Thr Cys Gly Ala Ser Glu Asn Ile Tyr Gly Phe
          20             25             30
Leu Asn Trp Tyr Gln Arg Lys Gln Gly Lys Ser Pro Gln Leu Leu Ile
          35             40             45
Tyr Gly Ala Thr Asn Leu Ala Asp Gly Met Ser Ser Arg Phe Ser Gly
          50             55             60
Ser Gly Ser Gly Arg Gln Tyr Ser Leu Lys Ile Ser Ser Leu His Pro
          65             70             75             80
Asp Asp Val Ala Thr Tyr Tyr Cys Gln Asn Val Leu Ser Thr Pro Arg
          85             90             95
Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys
          100             105

```

<210> 21

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
protein sequence

<400> 21

```

Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ala Ala Ser Val Gly
 1             5             10             15
Glu Thr Val Thr Ile Thr Cys Gly Ala Ser Glu Asn Ile Tyr Gly Ala
          20             25             30
Leu Asn Trp Tyr Gln Arg Lys Gln Gly Lys Ser Pro Gln Leu Leu Ile
          35             40             45
Tyr Gly Ala Thr Asn Leu Ala Asp Gly Met Ser Ser Arg Phe Ser Gly
          50             55             60
Ser Gly Ser Gly Arg Gln Tyr Ser Leu Lys Ile Ser Ser Leu His Pro
          65             70             75             80
Asp Asp Val Ala Thr Tyr Tyr Cys Gln Asn Val Leu Arg Val Pro Cys
          85             90             95
Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys
          100             105

```

<210> 22
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 protein sequence

<400> 22
 Asp Ile Glu Leu Thr Gln Ser Pro Ala Ile Met Ala Ala Ser Val Gly
 1 5 10 15
 Glu Thr Val Thr Ile Thr Cys Gly Ala Ser Glu Asn Ile Tyr Gly Ala
 20 25 30
 Leu Asn Trp Tyr Gln Arg Lys Gln Gly Lys Ser Pro Gln Leu Leu Ile
 35 40 45
 Tyr Gly Ala Thr Asn Leu Ala Asp Gly Met Ser Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Arg Gln Tyr Ser Leu Lys Ile Ser Ser Leu His Pro
 65 70 75 80
 Asp Asp Val Ala Thr Tyr Tyr Cys Gln Asn Val Leu Arg Val Pro Val
 85 90 95
 Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 23
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 5xHis tag

<400> 23
 His His His His His
 1 5

<210> 24
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 6xHis tag

<400> 24
 His His His His His His
 1 5